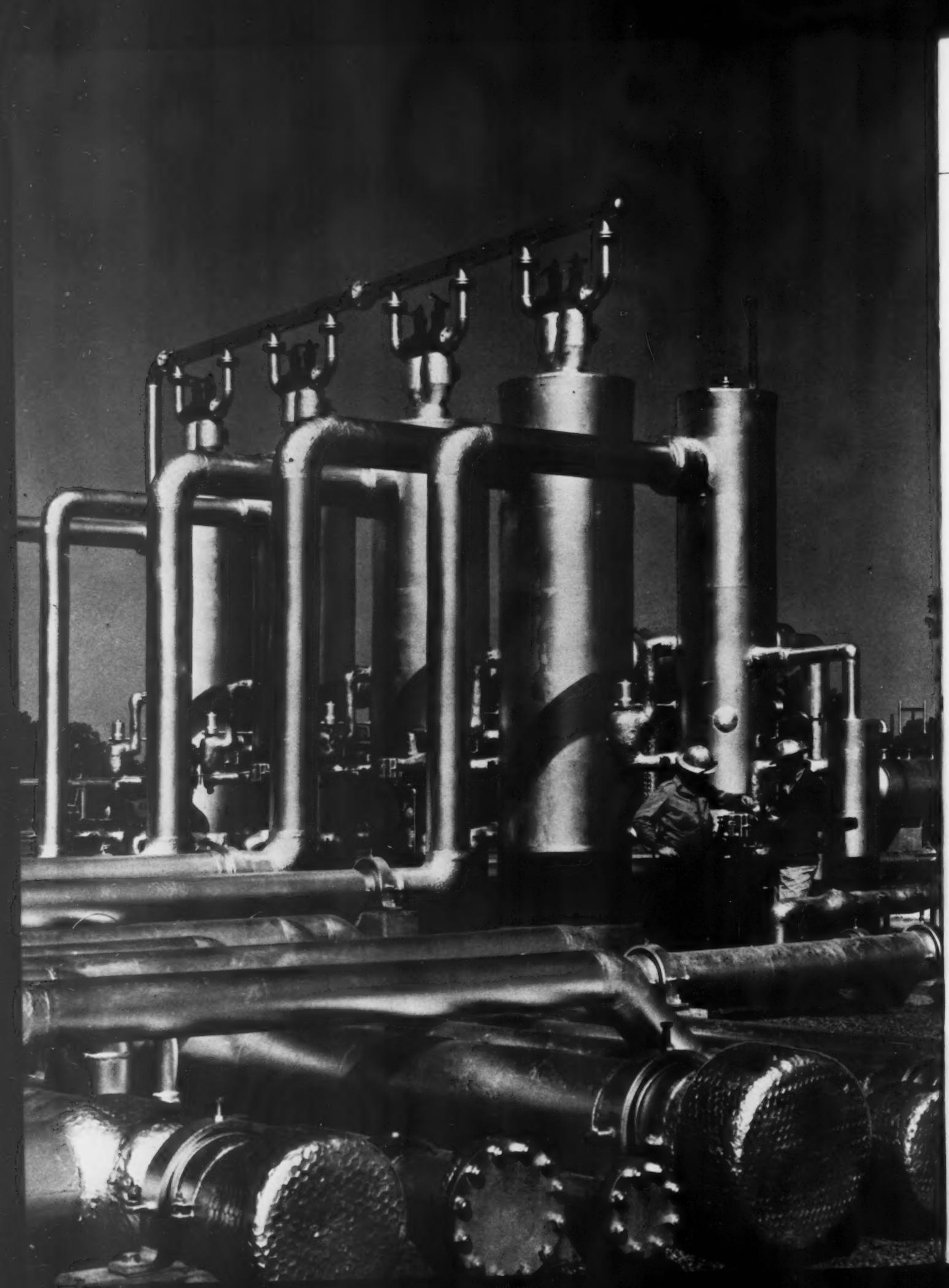
Valley Highway — *Avery Johnson*

The HUMBLE WAY

MAY-JUNE, 1950



The HUMBLE WAY
MAY-JUNE, 1950
VOL. VI No. 1

1950 Stockholders' Meeting

AT THE ANNUAL stockholders' meeting in the Humble Building, Houston, on Monday, May 8, President Hines H. Baker commented briefly on major points in the Company's annual report and discussed recent developments for the industry, and the Company's position with respect to natural gas.

To the gathering representing in person or by proxy approximately 94 per cent of all the shares outstanding, Mr. Baker stated that the oil industry's position is better now than a year ago. Stocks of crude oil and major products are considerably less than a year ago while demand in the first four months has shown a substantial gain. Current indications are that demand in 1950 may be about five per cent higher, whereas in 1949 it was about the same as the year before.

In the first four months of 1950 Humble produced about 239,000 barrels daily of crude oil, refined 192,000 barrels daily, and transported by pipe line 510,000 barrels daily. Continuation of the current favorable industry demand trend is expected to result in operations for the year as a whole at about the same level as in 1949. Present plans call for capital expenditures in 1950 of about $129,000,000, slightly in excess of the amount invested in capital facilities in 1949.

Mr. Baker said that an important problem for the future had been created by the veto of the Kerr bill, which would have clarified the Natural Gas Act as recently construed by the Supreme Court, by providing that arm's length sales* of gas by independent producers and gatherers are not subject to Government price control. The original Natural Gas Act, passed by Congress in 1938, provided that the Federal Power Commission's authority should not apply to the production or gathering of natural gas, and as late as 1947 the Commission itself adopted an order in which it ruled that regulation of price would not be applied to arm's length sales by producers. Subsequently, however, a majority of the Commission indicated that if not restrained by Congress, it would seek to exercise price-fixing authority over sales of gas to interstate lines for resale.

The production of natural gas is not a utility business, Mr. Baker said. Totally unlike the public utility business of transporting gas, it is a highly hazardous and risk-taking venture. Four out of every five exploratory wells

* Sales in which there is real bargaining between the seller and purchaser, as distinguished from sales between closely affiliated companies.

Operators set liquid level of the control instrument in the gas scrubber section of Humble's Opelousas Natural Gasoline Plant.

drilled are dry holes. If utility regulation is applied to gas production and the price at which gas is sold in the field fixed, then the incentives to discover new reserves will be inadequate to furnish the nation with sufficient supplies. The fact that gas prices have remained low relative to the price of other fuels is ample proof of the competition existing among gas producers in the principal supply areas. If by imposing utility regulation the Commission should hold field prices of gas to their present levels, which are lower than the relative prices of coal and fuel oil, the result will be to disrupt the operations of industries supplying competitive fuels. Fixing the price of gas in the hands of producers would pose a threat that similar action will be taken to fix the price received by producers of other competitive fuels. It is still hoped that such gas price-fixing by Government may be avoided through recognition by the Federal Power Commission that it does not have jurisdiction, through a favorable decision by the Supreme Court in a clear-cut case dealing with an arm's length sale by an independent producer, or through subsequent Congressional action.

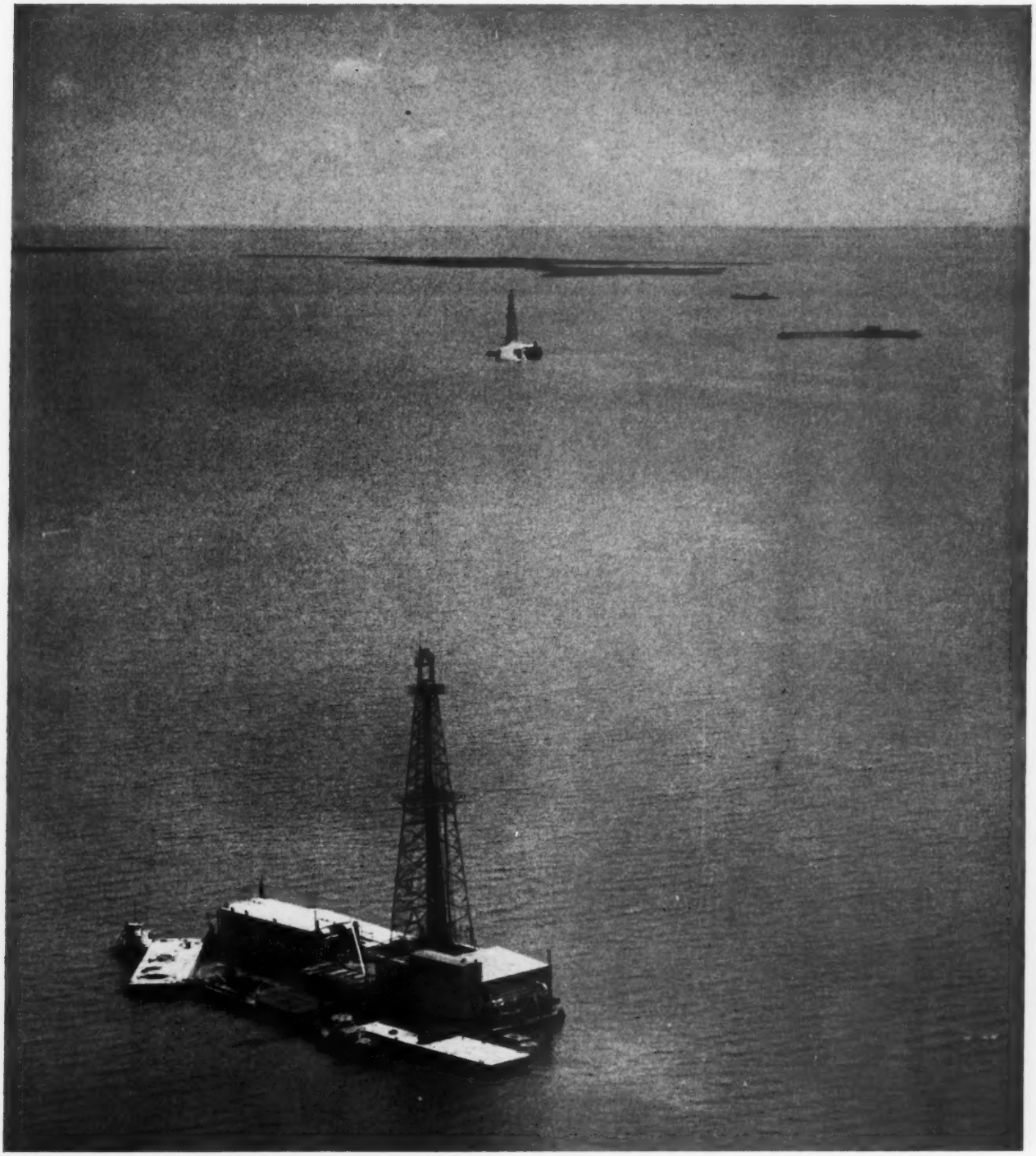
Speaking about operations on the Continental Shelf, Mr. Baker said that Humble has spent about $50,000,000 for leases, equipment, and drilling required in this venture, but has now slowed down activity because of the uncertainty with respect to title created by the suit of the Federal Government against Louisiana and Texas and with respect to the outcome of legislation being considered by Congress which would establish rights in the area. Humble now has only three rigs drilling on the Continental Shelf.

In conclusion, Mr. Baker spoke highly of the capable personnel of the Humble Companies and the excellent spirit of the organization in dealing with the problems incident to changing conditions. On behalf of the Board of Directors, he thanked the stockholders for their continued support and confidence.

The stockholders re-elected the following members of the Board of Directors: Hines H. Baker, L. T. Barrow, David Frame, D. B. Harris, J. A. Neath, Rex G. Baker, H. W. Ferguson, Morgan J. Davis, and C. E. Reistle, Jr.

At the meeting of Directors immediately following the annual meeting of stockholders, the following officers were re-elected: Hines H. Baker, President; L. T. Barrow, Chairman of the Board; David Frame, Vice-President; D. B. Harris, Vice-President and Treasurer; J. A. Neath, Vice-President; Rex G. Baker, General Counsel; Gay Carroll, Comptroller; H. K. Arnold, Secretary and Assistant Treasurer, and Nelson Jones, General Attorney.

Humble has spent about $50,000,000 for leases, equipment, and drilling required to develop oil on the Continental Shelf. The expensive, unusual, and complicated nature of that work is illustrated by the platform and converted LST drilling tender below. Activities on the Shelf have slowed down because the tideland decision clouds the states' title to offshore land.



Deep Production

Two barge rigs drill beneath the waters of Lake Raccourci in Southern Louisiana, where the deepest production in the Gulf Coast area is found. Humble's State Lease 1452 No. 1 in the field was completed to produce gas and condensate from 14,434-67 feet.

In the foreground is Humble's Rig 20, whose Diesel-electric power plant, with a 2,780 horsepower rating, makes it the most powerful rig now in operation in this country.

Since the photo was taken, the rig in the background has completed a gas well much shallower than the deep production. So far, Humble has three gas wells and two oil wells in the field. The production from the wells located on four different leases is gathered in the storage tanks located on the large platform to the right of the distant rig.

Better Living With Abundant Fuels

AMERICANS enjoy easier and more comfortable lives today than ever before. There are more and better products for the average person and many services to make life pleasant. Such things as automobiles, airplanes, central heating, air-conditioning, electric washing and ironing machines, radios, and television sets would have been hailed as miracles back in the Gay Nineties. Today, these and many other "miracles" have become commonplace.

How does it happen that we enjoy such a high standard of living? It is not because we work longer, for, in fact, we work shorter hours than people do in the rest of the world. Nor do we work harder physically. The real reasons for our prosperity are that a system of private enterprise provides the stimulus for efficient organization in developing (1) machines to do our work and (2) abundant low-cost fuels to run those machines. That explains why we can produce more with less time and effort than the people of Europe, South America, or Asia.

Without cheap fuels our cherished standard of living would vanish. We might still have the same machines, but we could not afford to use them to the extent we do if energy were much more expensive. The energy consumption in the United States amounts to the equivalent for *each of us* of a motor with 10 horsepower working constantly, 24 hours a day, 365 days a year! That much power does many things for us. It provides energy to drive our automobiles; energy to light and cool our homes; energy to heat our homes; energy to refrigerate and cook our food; energy to run machines in factories and on assembly lines; energy for a hundred other purposes. In fact, it would take 50 servants to do the same work that mineral energy does for each of us; and even then, human servants could not do for us some things that machines do. For example, they could not move us about at the speed to which we are accustomed with automobiles and airplanes.

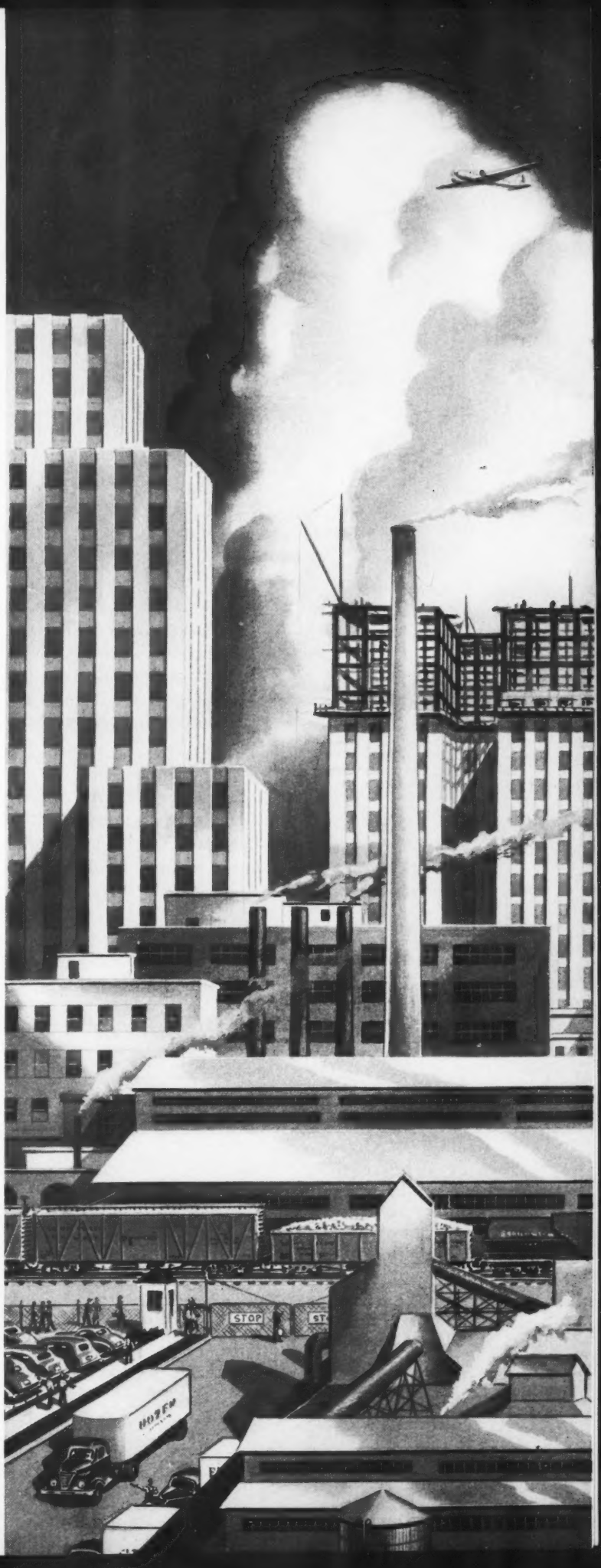
Let's consider just two simple ways in which energy has made life easier and increased our leisure time: heating and cooking. Fifty years ago wood had to be chopped or coal stored and shoveled for the stoves and fire places. Now, millions of homes have central heating systems using oil or gas, with a thermostat to maintain an even, healthful temperature. Even in homes without central furnaces it takes only a turn of the valve to light a gas stove. What used to be a difficult job is now done with little effort and low cost. Cooking also used to be a major chore. Mother had to spend hours over a hot stove trying to make things come out right with an uneven heat. Now, with a flick of

her fingers mother turns on a gas or electric range that gives precise heating, often with automatic controls to start and stop cooking while she is busy doing other things. Thus, another chore is made easy. And best of all, cheap fuels make it possible for the great majority of American families to enjoy these modern conveniences.

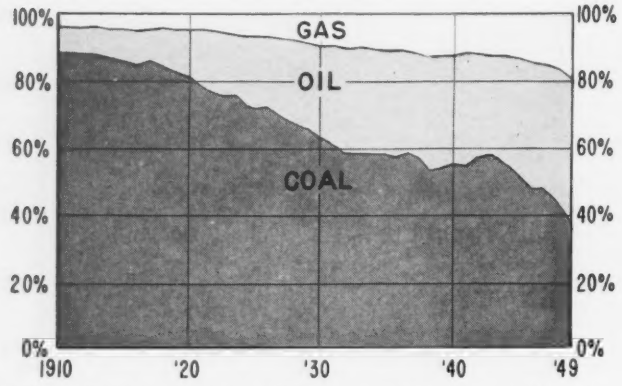
It is hard to realize how much manual labor we save by using mechanical energy. From the plowing of the land to the reaping of the harvest, from the building of a house to its regular dusting with a vacuum cleaner, fuels relieve us of many tiring and difficult jobs. We have come a long way from the time when practically all work was done by hand. Perhaps the most striking illustration of the change is indicated in the contrast between ancient and modern construction methods. King Cheops, for example, had to put nearly everyone in Egypt to work, in shifts of 100,000 men at a time, to build his great pyramid. Today we can duplicate this monument, insofar as size is concerned, in useful structures such as the great dams of the West, by using only a few thousand men and millions of horsepower to operate machines that do the work, and we can complete the job in a few years instead of decades.

Some of the greatest changes that fuels have made in our lives are in the fields of transportation. The invention of the "gasoline buggy" and the development of the automobile from it changed our whole pattern of living. We have become a mobile nation—a nation on wheels, a nation with wings. In a few hours we travel distances that would have taken days or weeks only 50 years ago. That means more than we realize. It enables us to bring up our children in suburban areas even if we work in big cities. It widens our choice of recreations and our circle of acquaintances. It permits us to travel thousands of miles on our vacations to see the magnificent scenery of America. It provides us with foods from the far corners of the world quickly and cheaply. Indeed, fuels have become an Aladdin's Lamp to turn our wishes into realities.

Where do we get the energy that we use in such abundant quantities today? In the United States, oil, gas, and coal are the principal sources of energy while hydroelectric power supplies only a very small fraction of the world energy consumption. Oil and gas supply about 60 percent of the mineral fuel in the United States and coal supplies the remaining 40 percent. This represents quite a change within the past twenty years, for as late as 1929 coal supplied two-thirds of the



U. S. Mineral Energy Consumption

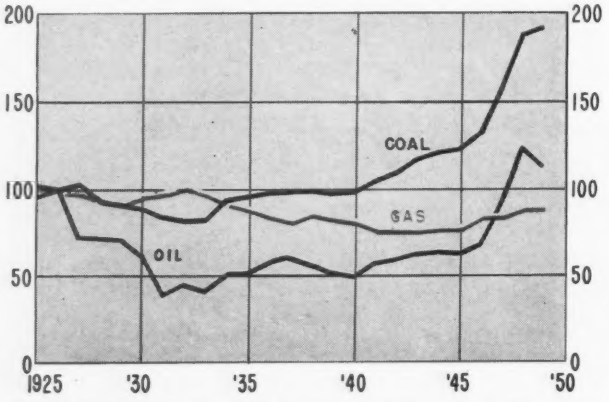


Oil and gas supply about 60 percent of the mineral fuel in the United States; coal the remaining 40 percent. In 1929, by contrast, coal supplied two-thirds of the mineral energy and oil and gas together supplied the remaining one-third.

mineral energy in the United States and oil and gas together supplied only one-third. But the competitive, aggressive petroleum industry has done a remarkable job during the last twenty years in discovering and developing new oil and gas resources. In fact, all of the increase in energy consumption in 1949 as compared with 1929 has been supplied by oil and gas, whereas coal actually supplies less energy now than in 1929.

The principal reason for the change which has occurred in the relative positions of coal on the one hand and oil and gas on the other, has been price. During the twenties, oil and gas were still relatively expensive fuels compared with coal. The success of the industry in finding large

Index of Wholesale Fuel Prices

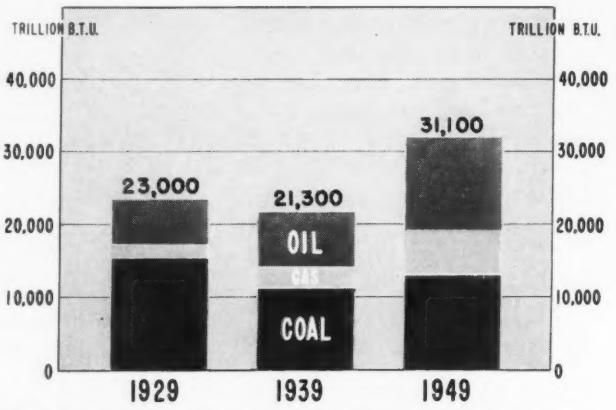


The index of wholesale fuel prices shows that, for many years, oil and gas have been much cheaper than coal. That accounts for the marked shift from coal to petroleum as energy resources during the past 20 years. Gas today is the cheapest of the three, is convenient, and in abundant supply.

quantities of new petroleum reserves, however, soon brought about a much lower level of prices. As a result, there was a great expansion in the use of oil and gas in the decades of the thirties and the forties. Coal has increased in price to such an extent that for some uses, and in many areas, it is not only less convenient but also more expensive than oil and gas. Considering the convenience and cleanliness of oil and gas as fuels, they have remained very attractively priced even during the postwar years when rapidly rising demand and costs have increased commodity prices substantially.

We use the products of the petroleum industry in enormous quantities—more than 2 billion barrels of liquid fuels and about 6 trillion cubic feet of natural gas annually. It takes a great deal of exploration and drilling to continue discovering and developing new resources equal to those being consumed. Since the hazards in the search for oil are substantial (with one dry hole out of every

U. S. Mineral Energy Consumption Increasing



During the last 20 years, there has been more than a 35 percent increase in mineral energy consumed in this country. Oil and gas supplied all of that increase; coal supplies less today than in 1929. Note marked increase in the use of gas.

three wells drilled by the industry) there must be sufficient incentive to producers to encourage them to continue the search for new oil. Fortunately, it is clear that the present reasonable level of prices for petroleum products is sufficient in relation to existing cost conditions to stimulate the amount of activity needed for continued economic progress and national security. Since our standard of living and our national security are based to such a great extent on ample supplies of fuel, we all have a direct interest in seeing that our energy requirements continue to be met efficiently. The public welfare can best be served by continuing the circumstances which have made it possible for the petroleum industry to develop large new resources and to supply its convenient fuels at prices that are extremely attractive in relation to competitive fuels and to commodities generally.

Needed lubrication for a specific machine is the subject of discussion between the plant manager and the oil company engineer. Recommendations for all plant equipment are included on the chart, which is always available for ready reference.

A Helping Hand for Industry

Engineers make plant surveys to help solve lubrication and fuel problems

It is a large manufacturing plant, with many rows of big machines strung out in orderly fashion under one roof. Down the aisle between the machines rolls a small wagon. The operator stops at a huge press, nods to the man in charge, and begins to look the press over.

Back to the wagon he goes, lifts a can over the side, and without interrupting anyone at the machine pours a quart of oil into a gear box . . . then, as quietly as he arrived, he leaves.

Is he a lubrication expert? A man whose knowledge of the variety of machines in the plant is so great that he knows what lubricant each machine needs and when?

Not necessarily. In fact, chances are more than even that the real expert was on the scene long before the maintenance man. The expert in this case is the oil company industrial lubrication engineer who has surveyed the plant; has recommended the oils and greases needed for each moving part on hundreds of machines; and has either marked each machine with decals indicating recommended product or has compiled a guide manual for the maintenance man's use.

Humble lubrication engineers offer to make such surveys in large plants and small ones in their effort to gain industrial business.

The owner or maintenance engineer of a plant who is satisfied with the petroleum products in use and is having no maintenance problems is not likely to accept the offer of such a survey. But in a plant where operating costs are high, where stocks of oils and grease are large and varied, or where morale is low because of

In large plants, making a complete survey may require several weeks for an engineer and an assistant. Every lubrication point on every machine must be included if the guide information is to be helpful and useful to the customer.

machine failures, the engineer is likely to be received with open arms.

Once he has authority to make a survey he goes at his job systematically. Model, type, size, and number of every machine are recorded on field note pad, and every lubrication point on each machine is listed. This may lead the lubrication engineer to the roofs of cooling towers and buildings, and into nooks and corners behind doors not often opened. But wherever it leads there he goes, gathering facts, studying machines, making notes.

"There's more to this plant than meets the eye," is an observation he is likely to make long before the job is finished. But he continues, for the survey is of little value unless every machine and piece of equipment is recorded.

Customers' needs studied

Back at his desk he begins the exacting task of recommending specific fuels and lubricants. From Company lubrication manuals, from his own experience, and from industrial guide books, texts, and manufacturers' literature he fashions the list of products. Here there can be no compromise. If the industrial consumer is to be helped the information he receives must be sound, dependable.

To serve Texas industrial plants, the Sales Department of Humble has 10 such industrial lubrication engineers. These salesmen seek to build industrial business for Humble by offering their training and experience to owners and operators of big and little plants. They have many rewarding experiences to compensate them for what may seem like tedious assignments at times.

"The quality of Esso Extra gasoline often is the clincher which opens the way for a survey in a large plant," reports one field engineer. "The maintenance superintendent likes Esso Extra in his car and is convinced of the quality of our other products."

In a heavy equipment manufacturing plant one engineer found a large 12-cylinder gas engine on which high-cost roller bearings had to be replaced every 60 hours with the lubricant in use. Heat and overload were making the grease in use unsuitable for the job. The engineer studied the case and recommended a Humble product. Since then the bearing has been in operation for more than a year without replacement, and the customer is happy.

In another plant where a number of air tools were being used, five gallons of oil were being consumed every week and exhaust vapors were a messy nuisance. A product designed especially for air tools was recommended. Consumption was reduced from five gallons to one quart a week, and exhaust vapors were completely eliminated.

In almost every plant where no previous survey has been made, a number of obvious misapplications of lubricants are found. Stocks of lubricants often are too large and too complicated. Because no system exists for lubricating the various machines, there is no system for ordering needed materials.

System for each plant

In large plants, where a great many machines of various kinds are in operation, Humble engineers use the decal system for guiding lubrication men. Each lubrication point is marked with a small colored decal. Oval decals indicate an oil is needed; rectangular decals call for greases. The color denotes the grade.

In some plants complete recommendations for each machine are listed on a sheet which is enclosed in transparent protective material and hung conspicuously on the machine. If necessary, the operator himself can handle the lubrication problems.

How are these surveys received in industry? Here's the verdict of field lubrication engineers:

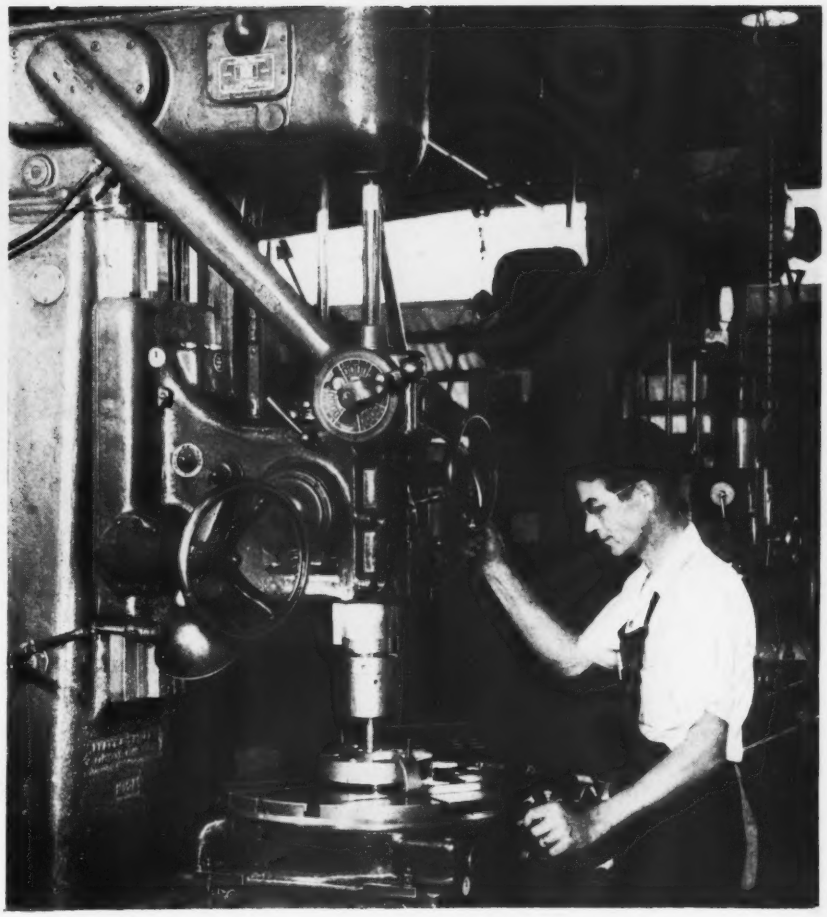
The average plant engineer or maintenance superintendent and his sectional superintendents welcome surveys and suggestions. All of these men generally have to know some-

thing about everything in the plant or in a sub-section. Generally they haven't time to become expert on all. So, if an expert in the field of lubrication is not only willing but eager to make a survey and offer recommendations for the entire plant, it enables these men to devote much more time to their day's work.

In addition to supplying the list of recommended lubricants for each machine, the completed survey report prepared by Humble engineers usually includes a carefully selected amount of specialized reading material. This may be in the form of reprints from established technical journals; it may be Company material on products; or it may be authentic research material for special types of machines taken from dependable trade publications.

The preparation of a complete survey may result in the engineer-salesman obtaining all or only a portion of the business of the plant surveyed. In either case, the survey is personalized to executives, engineers, and supervisors in maintenance, and enough copies are supplied that each lubrication man may have one for ready reference.

Whether the industrial plant is large or small; whether it is a new one, or whether it has been operating for many years, Humble industrial lubrication engineers are prepared to make a complete survey, to recommend products for every use, and to help solve operating problems.



Circular white dot at left of machine operator's left hand is a decal marker which tells the shop maintenance man what lubricant is needed. Above the control wheel at left is another. Lubrication points on all machines in this plant are marked this way.

Operator pours oil of a specified grade into the automatic lubricating system on a bank of compressors at a large gas plant. Definite specifications resulting from a complete plant survey enable operators to handle lubrication problems in routine way.

Traveling the Highways o

Area's historical background and beauty make leisurely motor trip interesting.

AS YOU travel through Southwest Texas you are intrigued with the way the scene changes as the miles unfold.

You see how varied and beautiful the area is, how rich in material resources, how saturated in history. You see its beautiful missions and its scores of roadside markers that commemorate events in Texas history.

You see mature cities like San Antonio, Corpus Christi, Laredo, and Brownsville, and growing towns like Victoria, Kingsville, Alice, McAllen, and Harlingen.

You see oil derricks and production tanks, pipe line stations and gas plants—all visible symbols of the area's contribution to the energy resources of the state and nation.

You see tall towers and massive steel units of new and expanding industrial plants which convert the mineral and agricultural wealth of Southwest Texas into a widening stream of commercial products.

You see some of the many thousands of cattle which graze on the improved pastures of its famous ranches. As you roll along through the mesquite and oak-studded expanses, such names as King, Kenedy, O'Connor, and others awaken in your memory stirring tales of Longhorns, famous cattle trails, and hard-riding cowmen of earlier days.

Broad farmlands

You see rich farmlands, miles of flat black land producing sorghum grains, cotton and vegetables; and the great expanse known as the Magic Valley of the Rio Grande. In this four-county region, palm-lined roads lead through orderly orange and grapefruit groves and fields green with vegetables.

From the Valley you go northward, through a great sweep of brush country with only sparse signs of human habitation. This is the home of quail, white-winged doves, deer, javelina, and other game.

You drive on to San Antonio, cradle of Texas history. In the shadow of the Alamo you stay for a few days to relax and to review your travels.

While you rest you read eagerly the history of Southwest Texas. The book holds your interest like a novel. From it you learn that 27 years after Columbus discovered this continent the first sandaled feet of white men trod the hot sand of Southwest Texas. It was in 1519 that Alonzo Alvarez de Pineda sailed into the mouth of the Rio Grande to claim part of the lands of the Aztecs for the governor of Jamaica.

Thereafter, you find that expeditions to Texas came in quick succession—more than 90 during the next two centuries. They carried the flags of Spain and France, and they came for several reasons. Some came to colonize and Christianize; some to claim lands for the crowned heads of Europe; some to search for gold and fabled cities . . . all left imprints which time has not erased.

Intriguing history

One evening while walking in the moonlight the romantic pages of Texas history turn in your mind's eye and you begin to see a living historical cavalcade forming in the sky:

Conquistadors in plumed hats and suits of armor ride by. Missionaries plod along, holding the cross high as they push on into the wilderness. Everywhere frightened Indians, fearing the intruders, try to ambush them.

Then come more exploring expeditions, on horseback and on foot, and always in the van are robed friars. Their zeal soon finds expression in the magnificent missions which serve as church, granary, and fort.

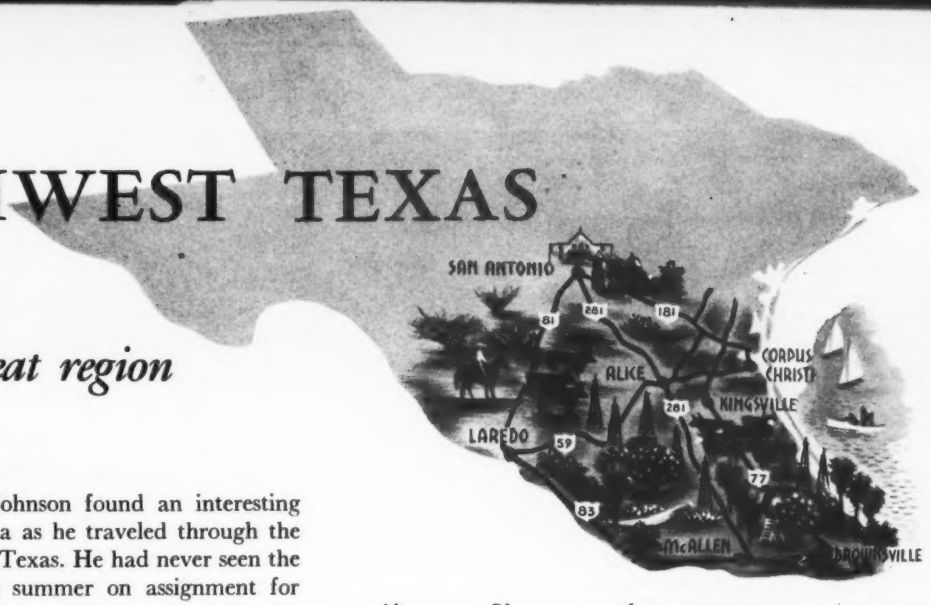
Later come white settlers . . . and then the conquering armies of Mexico. Still later, under free skies, come cattle men with barbed wire and six shooters . . . and pioneers from many lands to build a new life.

At the end of the parade come farmers, oil men, and industrialists. Together with the cattle men these newcomers move forward with vigor and faith reminiscent of the early explorers.

. . . As the moon sinks westward you snap the visionary trend and you try to put reality and fancy together in one picture. You recall the old world charm of historic places, the changing beauty of the land, the natural resources, the industry and commerce, and the progress of its people—all woven into a strong, colorful fabric that is Southwest Texas today.

s of SOUTHWEST TEXAS

An artist interprets a great region



WATERCOLORIST Avery Johnson found an interesting and ever-changing panorama as he traveled through the great expanses of Southwest Texas. He had never seen the area until he toured it last summer on assignment for THE HUMBLE WAY, and was much impressed by the storied ranch lands and the fertile Rio Grande Valley.

The cover painting is a scene which captured the New Jersey artist's fancy: a drilling rig looking down on a palm-lined avenue in the lower Rio Grande Valley. The sunset on *Monte Christo Road,* below, also attracted the artist with its blends of lush Valley vegetation and the warm hues of the setting sun.

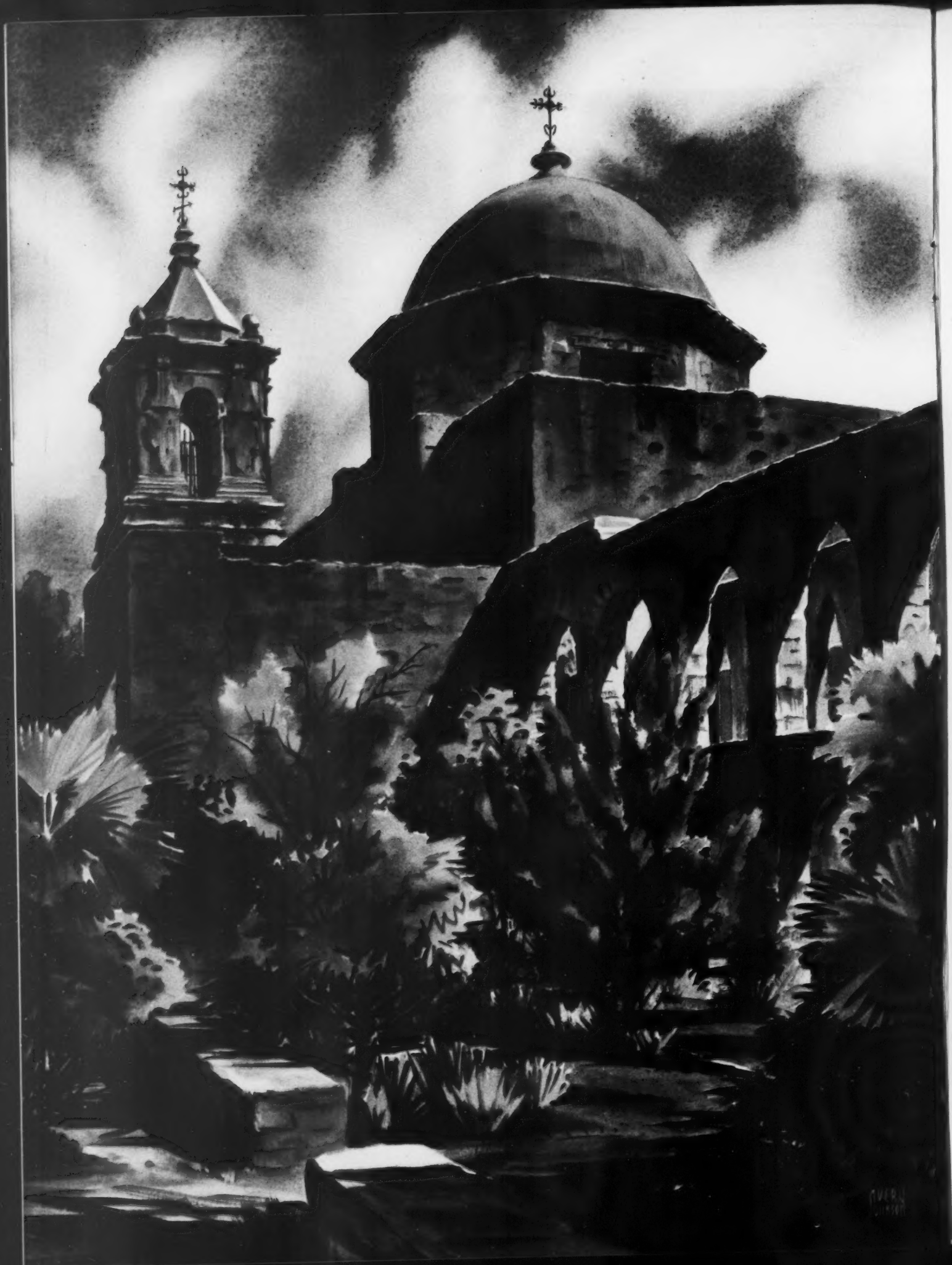
Afternoon Showers on the next two pages is a scene typical of the great ranch country farther north: the winding highway, oil tanks, and cattle, and in the background one of the sudden thundershowers which bring relief to parched grasslands.

Johnson's colorful *Mission San Jose* on the following page truly captures the soft, antique beauty of the mission. This beautiful scene is one of his favorites.

Monte Christo Road — *Avery Johnson*

Afternoon Showers

Avery Johnson



THE MISSIONS: *Landmarks of an era*

The missions of the Southwest were built to Christianize the Indians, but they were also important as a means of extending Spanish rule and warding off the threat of encroachment by the French. In addition, they exerted a profound cultural influence on the land and its people.

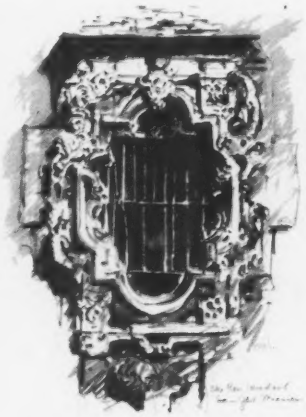
Missions were the first schools in the Southwest. Within their walls, patient padres taught Indians and Spaniards to grow mentally as well as spiritually. With this cultural foothold, civilization took slow but stubborn root in the New World. Looking back on their multiple uses as churches, schools, forts, granaries, and dwelling places, the missions are landmarks of an interesting era.

Of the score or so missions built in Texas, only eight remain standing. Seven of these are presented on this foldout of pencil sketches by E. M. Schiwetz, native Texas artist.

Mission San Jose in San Antonio, the subject of Avery Johnson's painting on the opposite page, is said to be the most beautiful mission in the Southwest. Its full name is Mission San Jose y San Miguel de Aguayo.

Begun in 1720 and completed in 1731, Mission San Jose was founded under the direction of Father Antonio Margil, a Franciscan who also built a number of other missions in the Southwest. So great was his influence on missions and their work that, according to legend, bells in all the missions began to toll at the precise moment of his death in Mexico City.

San Jose was built on the San Antonio River just a few miles from Mission San Antonio de Valero, which was later to become famous as the Alamo. The dome seen in Johnson's painting was rebuilt in recent times. The original dome and part of the wall fell with a crash one stormy night in December, 1868, after treasure hunters had undermined the structure digging for gold that was supposed to be buried there.



The Rose Window, San Jose

Pedro Huizar (also spelled Huicar and Huisar) was San Jose's architect and sculptor. Huizar was a descendant of the architect who designed the world-famous Alhambra, a Moorish stronghold in Spain. Coming to the New World seeking his fortune, Huizar planned to return later and claim his fiancee. But as he was preparing to sail back to Spain after her, news came that she had married another. Gloomily forswearing all womankind, Huizar lost his sorrow in his work and devoted his life to the church. He spent 20 years decorating San Jose, where his wonderful carvings, especially those of the mission's facade and baptistry window (the famous "Rose Window"), established him among the most brilliant and gifted sculptors of that age.

Like all missions, San Jose has its share of interesting legends. At the proper time and under the right conditions, one is supposed to be able to hear ghostly conversations at its "Window of the Voices" and catch the soft tread of sandaled and moccasined feet within its walls.

But perhaps the saddest and most romantic of lengends about the place concerns a young Spanish nobleman, Don Luis Angel de Leon and his fiancee, Teresa. Leaving Teresa in Spain, Don Luis journeyed to the New World. He planned to return for her, but was killed in an Indian raid and buried in the mission cemetery. News of his death reached Teresa just as she was gathered with others to celebrate the casting of new bells for San Jose. Grief-stricken, she removed a gold ring and cross Don Luis had given her and flung them into the metal from which the bells were to be cast. As she did so, she prayed that the bells might take a message to her dead betrothed. Legend has it that the bells delivered that message when they first rang the Angelus over Don Luis' grave. And from that time forward, the bells of San Jose were marked by a particularly beautiful tone.

Mission San Jose
by AVERY JOHNSON

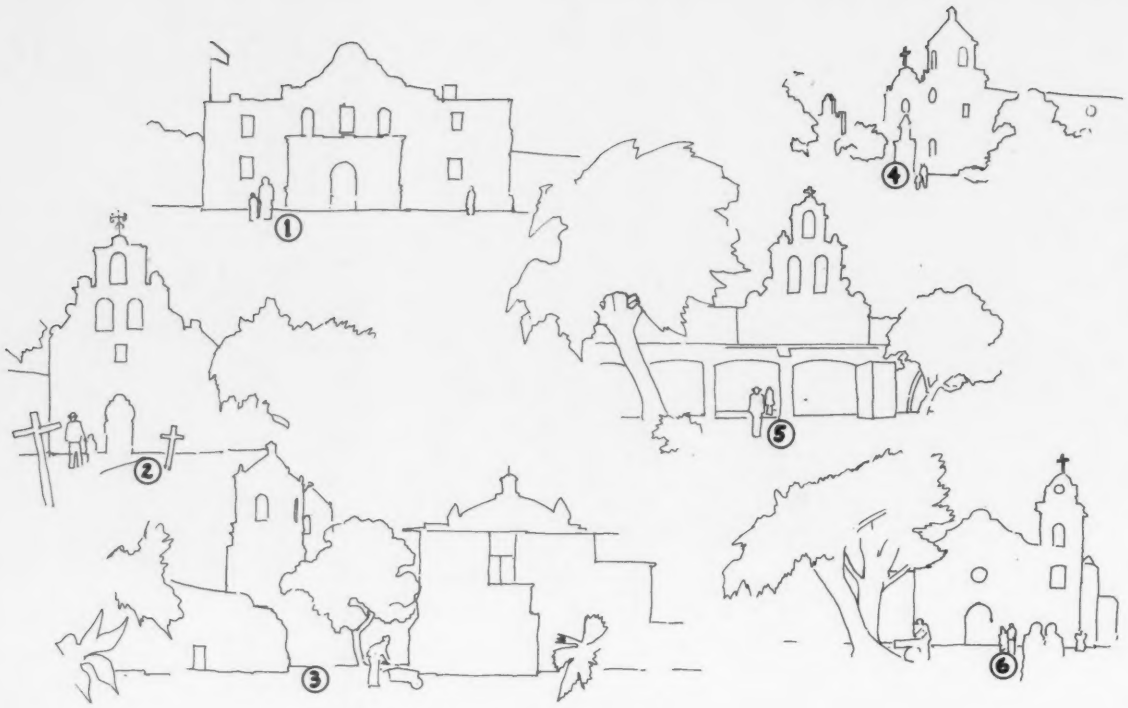
La Bahia

Missions of Texas

Sketched by E. M. Schiwetz

as

Espiritu Santo de Zuniga - Goliad
San Juan de Capistrano - San Antonio
Mission at Ysleta.



THE MISSIONS OF TEXAS

Key to Schiwetz Sketches

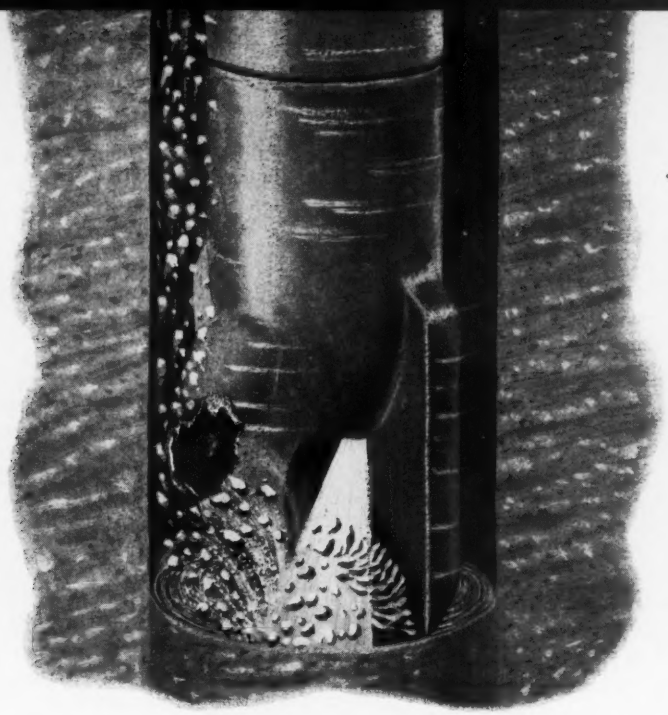
1. *The Alamo,* originally named Mission San Antonio de Valero, was established as an Indian school on the San Antonio River in 1718. In the center of present-day San Antonio, it was the scene of the historic Battle of the Alamo on March 6, 1836, when 187 immortal Texans, fighting for Texas independence, were massacred by a Mexican army under Santa Anna.
2. *San Francisco de la Espada*
3. *Concepcion Purisima*
5. *San Juan Capistrano*

   Father Antonio Margil, leading mission builder of the Southwest, accompanied an expedition to East Texas in 1716. He and his band of eight friars re-occupied two missions there and established four new ones in the area around Nacogdoches. Fifteen years later these missions were either abandoned or moved to San Antonio and renamed. Among those moved to San Antonio were San Francisco de la Espada, Concepcion Purisima, and San Juan Capistrano.
4. *Espiritu Santo de Zuniga* was established on Matagorda Bay in 1717. This mission was later moved to a point about two miles from Goliad and has been restored in recent years.
6. *Ysleta* was the first church built within the present bounds of the state of Texas. It was established in 1681 and completed the following year on a small island in the Rio Grande. The river changed its course and the site is now in Texas, near the town of Ysleta.

   La Bahia was established in 1722 on the site of La Salle's Fort St. Louis on Matagorda Bay. It was twice moved before being permanently located in 1749 at the present site near Goliad.

The Artist, E. M. Schiwetz

In the sketches of The Missions of Texas, E. M. Schiwetz interprets architectural subjects in his distinctive pencil technique—a field in which he gained renown early in life. After earning his Master's Degree in architecture from Texas A & M College some 30 years ago, national recognition came quickly for his exceptional pencil work. He has since become well known in the Southwest for his fine watercolor paintings, many of which have appeared in The Humble Way. For the mission series he chose his first medium—his pencils.



They Drill *FASTER*

Humble rigs are setting drilling records with jet-type bits and precision teamwork

FIFTEEN minutes before midnight on May 10, Driller Eddie Diamond rested his foot on the drawworks brake of Rig 28 to finish totalling his log book. He whistled in surprise and checked his addition before turning to his crew: "We drilled 2,448 feet; that must be a new record!"

George Mayfield, the morning tour driller who relieved him, verified the report Diamond filled out that night. It showed 15 minutes for running 720 feet of drill pipe in the hole and seven hours 45 minutes drilling time—an average speed of 332 feet per hour! They had drilled 30 feet and connected a new joint of drill pipe about every five minutes, though some connections were timed less than four minutes apart.

On any type rig, such speed is exceptional. Yet this typical Humble crew achieved it in the normal course of their work. Their fine teamwork and skill, coupled with the proper use of new practices and "good digging" enabled them to set a record for speed while they hold another distinction: the Louisiana division plaque for drilling safety. Speed, with safety, is a real accomplishment.

Driller Diamond and his crew knew they had set a record for drilling speed, for their own Rig 28 held the previous records. In March and again in April other crews on Rig 28 had set records by drilling 2,014 and 2,019 feet during regular eight-hour tours.

On the night the present record was set, the evening tour crew ran eight stands of drill pipe in the hole and began drilling. After 45 minutes Diamond and derrickman M. W. Buckley checked the log book and found they

Driller W. E. Diamond's evening tour crew on Rig 28 set current record.

Drillers W. L. Nelson (above) and G.D. Mayfield also set records on Rig 28.

Plaque for best safety record in Louisiana division hangs over drillers' desk on Rig 28. Toolpusher A. W. Cook stands by as Driller Nelson writes up report.

had drilled 330 feet. With such a start the whole crew decided to see what they could do, and really went to work. They set the new record easily, even after it took 35 minutes to drill the last 60 feet when they hit limestone. Mayfield's crew had their work cut out for them when they came on; they made a round trip and went in and drilled 1,100 feet with a rock bit before they were relieved by the day crew. That is exceptional speed for rock bit drilling.

Every man on Rig 28 is ready to talk about drilling speed, for each one knows it takes the finest kind of teamwork and cooperation—and the breaks—to set records. They readily agree that they might be just as pleased to drill 50 feet in some areas, such as parts of West Texas.

As it is, among the ante-bellum plantations around colorful Natchez, Mississippi, things must be just right to give a crew a start drilling below the surface casing set at 800 feet. From there down to about 3,400 feet is typical Gulf Coast shale and sand which is easily drilled with new jet-type bits, and the crews have a real opportunity to test their precision timing in the rapid connection work. Where they have a longer stretch above the limestone, the men on Rig 28 think they can still better their record.

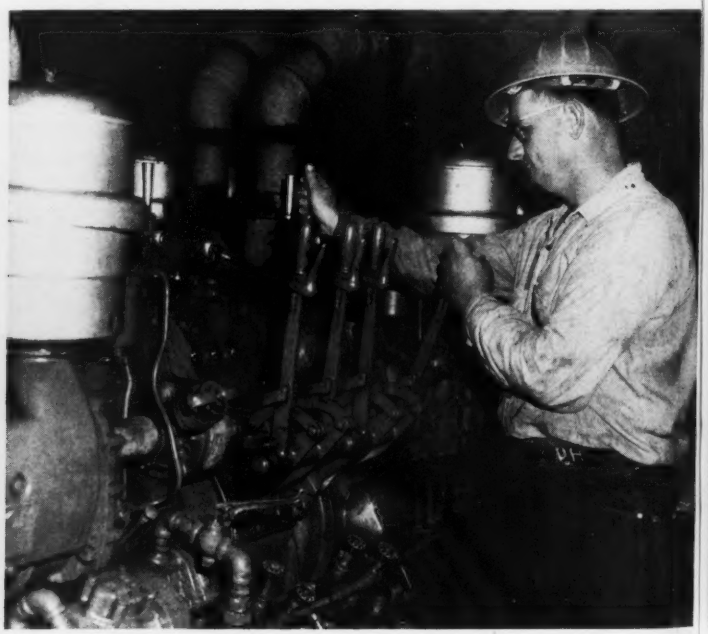
Humble crews are setting records for faster drilling in other places; some increases are up to five times previous speeds. With their skilled precision, they have taken new Humble-developed drilling practices and proved their worth conclusively. Rig 26, a barge rig in the waters of Lake Sand in Southern Louisiana, has been drilling and completing 10,800-foot wells in only 18 days, compared with a previous 47 to 53 days. In the Jourdanton field of Southwest Texas, Rig 11 has cut the time for drilling 5,200-foot wells from 15 to seven days. Since last November, the crew of Rig 28 has drilled and completed 14 wells totalling 97,803 feet in depth, and reduced the time to drill and complete a well from a previous 23 days to eight days. Humble rigs everywhere are drilling faster, and they continue to improve their safety record.

New drilling concepts

These new concepts of rotary drilling center on effectively using the rig's horsepower. No new equipment is needed; it requires jet-type drag bits and proper use of the rig's horsepower as developed by Humble drilling research and—most important of all—a skilled drilling crew. These advances have made the biggest jump in drilling rates since the development of the rock bit about 1909.

Surprisingly, there has been little fundamental study of drilling methods despite the nearly two million wells which have been drilled in the oil industry's 90 years. Back in the early 1880's two brothers from the Dakota territory contrived a rotary hydraulic

Throbbing mud pump is heart of a rotary rig; derrickman counts strokes with stopwatch to determine exact speed.



Powerful Diesel "quad" engines are kept in tip-top condition for high-speed drilling under careful hands of rig's enginemen.

method of drilling water wells, and eventually took their rotary to Corsicana, Texas, about 1894.

At the time, the chagrin of the city fathers that oil gushed from the "water" wells drilled for the city had failed to daunt the oil men attracted by the find, and an oil boom flourished. The Baker brothers' rotary method of drilling was soon adopted for drilling the soft Texas formations. This was the first fundamental change from the churn or cable tool method of drilling for oil which Drake had used for the first oil well. Both methods had been used much earlier for drilling water wells.

By 1901 when Spindletop was drilled with rotary equipment, the original mule power and windmill pump had been replaced by a steam engine and mud pump. Today the basic fluid cycle is substantially the same. Rotary drilling spread rapidly in the Gulf Coast area, but it was many years before rotary rigs outnumbered cable tools in areas where drilling was extremely hard.

Down through the years changes were made gradually, usually because of some driller experimenting with a problem. The rock bit developed to grind up extremely hard formations was a big advance. As time went by, the equipment was consolidated and "unitized" for easier moving and handling, and small evolutionary changes were made in bit designs. All kinds of theories were advanced on how to drill faster, and some worked in one place, failed in another. Few prevailed.

Obviously, if the price of drilling for oil were to be held reasonably in check as more and deeper wells were drilled, drilling costs would have to be reduced. Yet most of the effort, until recently, centered on developing better equipment. Only gradually did drillers and engineers begin to realize that equally important answers might lie in a study of the fundamental *principles* of rotary drilling.

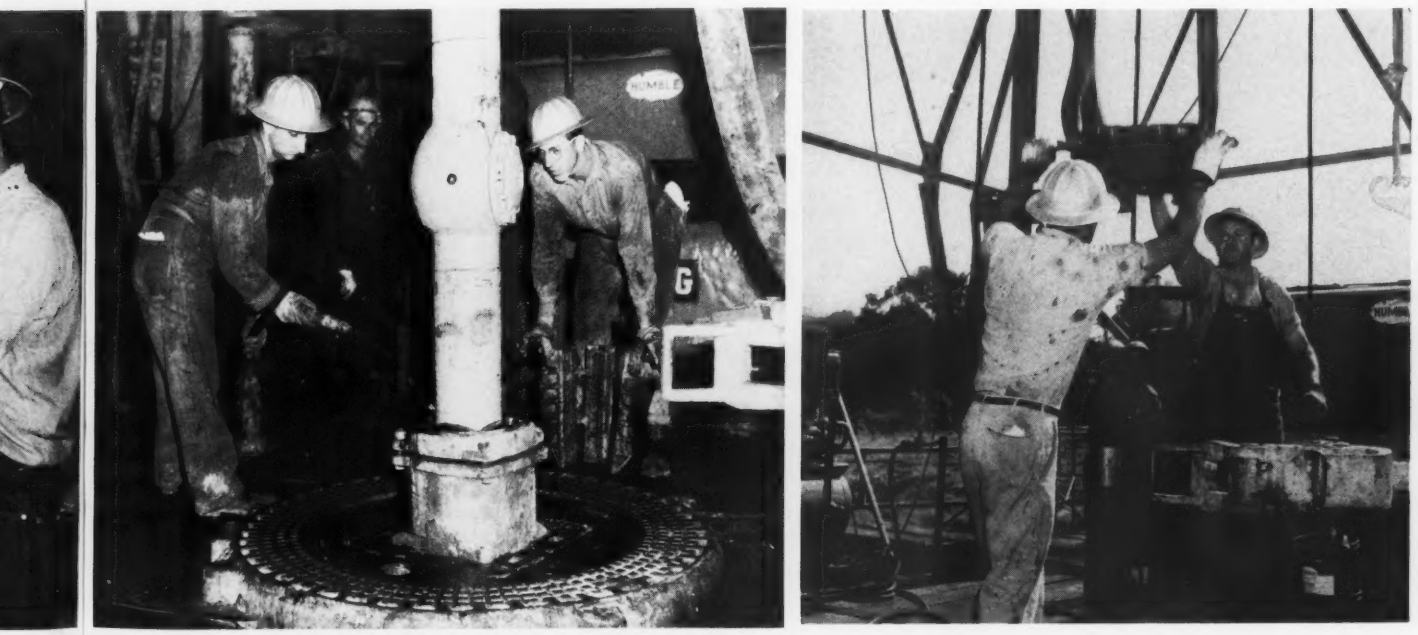
Drilling methods studied

Drillers on a Humble rig in Louisiana in 1943 reported finding a relationship between the circulating rate of the drilling fluid and the drilling rate in shale and sand of the Gulf Coast. Humble drillers and engineers pricked up their ears. Perhaps here was a clue to an entirely new approach to the problem of cutting down on drilling time. In 1944 seven wells were drilled in Louisiana on which detailed records were kept. The evidence was sufficient to result in a research project, established in 1946, to study factors affecting drilling rates in the Gulf Coast areas.

The procedure that followed was tedious; but it paid off in the long run. As wells were drilled, records were kept to determine which methods demonstrated the greatest efficiency. The suspicion that higher circulating rates meant higher drilling rates was borne out early, but as the circulating rate was increased, drillers found they could carry more weight on the bit. Which gave the faster drilling rate?

There was a lot of work ahead in isolating each of the four main factors affecting drilling rates and determining their relationship: the circulating rate, weight on the bit, speed of rotation, and the nozle velocity of the mud passing through the bit. Drilling crews cooperated readily in the often-vexing task of drilling short 30- to 60-foot sections while maintaining all but one of the factors constant. That factor was then varied from maximum to minimum to determine its effect on the rate of penetration.

As the tests progressed, the indi-



Safe precision teamwork of crews on Rig 28 is typical of all Humble crews; evening tour crewmen (left) stand ready for pipe to be raised, day crew makes a round trip—a frequent job where wells are drilled and completed in eight days.

vidual effect of each factor became clear: the drilling rate was directly proportional to each one. Each factor had been isolated and its effect determined—the task now was to put them together in the right amount to obtain the best result. When the tests began, it was thought that a high circulating rate would be best because the main purpose of the drilling fluid semed to be to flush the cuttings from the hole. The tests showed, however, that the higher drilling rates gained by faster circulation were offset by the need for using more and larger pumps for deep drilling.

New bit design

Tinkering with the nozzle velocity of the mud brought to light the real answer to this problem. Instead of the high circulating rate, bits with small watercourses were used to increase the nozzle fluid velocity. Drilling rates jumped two and three times with no extra pumps or horsepower.

By now, these basic facts became clear: Increased nozzle fluid velocity, rather than a higher circulating rate, gave the biggest boost in drilling rate. While drilling at these higher rates, the best weight seemed to be about 40,000 pounds—four times the customary weight—on the bit and a rotating speed of 150 revolutions per minute or higher.

But a new difficulty arose that required a different approach. High nozzle fluid velocities of 200 to 500 feet per second wore out bits quickly. Could bits be designed to stand up under the pressure? Bit manufacturers cooperated; and in a few weeks tungsten-carbide nozzles—specially designed to withstand the abrasion of high mud velocities—were installed in some bits.

This business of probing into fundamental principles of drilling already was foreshadowing the day when a hard-hitting crew could come through with the remarkable record of drilling more than 300 feet in one hour, And so the research went on.

Was there a better design of the bit that might make for faster drilling?

The researchers began making tests by drilling in clay and wax. A portable rig was set up on an East Texas hillside and the cutting of the bit was observed as it drilled the side of a cliff. They found that the digging

Jet-type bits Drag bit (above) was developed for drilling relatively soft shale and sand of Gulf Coast area; blade peels up chip which is pulverized by mud jetting from the nozzle beside man's gloved hand (see drawings on page 19). Experimental jet-type rock bit at right has already increased drilling rates 10 to 100 percent in moderately hard formations. This and similar types are being tested in the extremely hard rock drilling areas of West Texas and Southeastern New Mexico.

blade of the bit at each revolution threw up a chip of clay or wax (shale or sand in real drilling) in front of the blade. With a few manipulations, the experimenters directed the high-velocity stream of mud to the top of the chip as in the drawing on page 19; the stream pulverized the chip on contact, thus lightening the resistance to the blade and sweeping the particles upward quickly and easily. On these special bits the blades were straightened and faced with borium and tungsten carbide.

In real drilling operations the new bits—harder now, and with the nozzle fluid directed at the top of the chip—drilled as much as five times faster than the old bits. Also, they could carry up to 40,000 pounds weight without balling up and reducing the drilling rate.

Bits last longer

Experimenting is all right, but how would the new bits and practices hold up under steady field work? Engineers, drillers, and crewmen alike watched with interest as the new-type bits were used by Humble rigs in the Gulf Coast area. Regular practice called for something new in drilling: twelve drill collars—the extra-heavy sections of drill pipe placed just above the bit for weight—a weight of 40,000 pounds.

The bits lasted longer and drilled faster. In 10,000-foot wells in the Sugar Valley field the number of bits to drill a well was reduced from 25 to 15, and actual drilling (rotating) time was halved! One bit drilled as much as 4,000 feet! This was a double gain, since there were fewer round trips to change bits. The stage was set for the fastest drilling the world has ever seen.

Carrying so much weight on the bit caused some doubt in the oil fields, because every driller knows that too much weight on the bit will cause it to "wander" and deviate the hole from vertical. With jet bits, however, the deviation is no more than with conventional bits.

Reduced wear of equipment is another gain with jet-type bits. There is less wear on the drill pipe, since there are fewer revolutions per foot drilled. There is less wear on all rig equipment, as everything operates at full capacity for a shorter time.

THE CREW OF RIG 28 DURING MAY, 1950:

Toolpusher A. W. Cook.

Drillers W. F. Tyree, W. E. Diamond, G. D. Mayfield, W. L. Nelson.

Derrickmen V. P. Kunefke, M. W. Buckley, R. C. Jabusch, Jr., Q. W. Fordham.

Enginemen W. N. Garrett, E. P. Hebert, Sr., D. E. Howard, J. L. Sistrunk.

Rotary Helpers R. C. Barbour, Jr., G. L. Bond, E. J. Boudreaux, J. L. Duncan, J. A. Gordon, Jr., G. J. Dore, W. P. Guillot, A. H. Parker, K. J. Van Ness.

Faster drilling is more than a thing of competition between drilling crews; it is important to all Humble people. Humble is in the oil business, and drilling is an important part of the Company's operations. In 1950, as in other years, a large part of the Company's earnings is being spent in drilling more wells. This year's $70 million for drilling 1,000 wells is even larger than for the record 937 wells drilled in 1949. Improvements in drilling mean that more wells can be drilled, including more wildcats seeking new oil.

Humble's research into the factors of drilling was a pioneering effort, but the success has stirred interest in the industry in developing better drilling methods. The results of this research with the industry have been shared by publishing the methods used and the results obtained.

The success of the research into the factors affecting drag bit drilling prompted Humble engineers to turn to rock bit drilling. This work began last year, and already drilling rates in medium hard formations have been increased from 10 to 100 percent by applying the principles which apply to drag bit drilling.

In the Pickton field in Northeast Texas, Rig 17 has used jet-type rock bits and cut the time for drilling 7,000-foot wells from 46 days to 28: The morning-tour crew of Rig 28 changed the drag bit which drilled at the record speed and still had time to drill 1,100 feet through limestone with a jet-type rock bit. With those bits and formations, that is exceptionally fast drilling.

Studies in rock bit design and the properties of the drilling mud have shown promise of further results. Already known is the fact that the properties of the drilling fluid are important with rock bits. Different types of muds have varying effects on the drilling rate, and in some places, there has been a return to drilling with water down to certain depths. Water, incidentally, is an ideal fluid in some types of rock drilling.

Jet rock bits faster

The experimental rock bits, like the drag bits, have the mud stream or "jet" directed to flush the cuttings from the bottom rather than to clean the cutters. With the experimental bits now being tried in some areas, the jet rock bits have drilled an average of 65 percent *more footage* per bit—70 percent *faster*—than with a conventional rock bit. Further studies in rock bit drilling, again with the cooperation of bit manufacturers, are being made in the hard rock drilling areas of West Texas.

The thread of real significance woven through this story of drilling research and progress is the practical results obtained. Real savings in time and effort are available now without the expense of new or added equipment. No expense was added, but significant savings have been made through better understanding of the proper use of rig equipment.

There was no magic, but foresight, ingenuity, and the teamwork of Humble men—the Humble way.

Five Years with *The* HUMBLE WAY

Accuracy is the keynote in this record of the Company, its people, and its way of doing business

Five years ago, Page 1 of the first HUMBLE WAY explained how the new publication got its name: ". . . There is, and always has been, a Humble way of doing things. It is a distinct way . . . it has been predominately the right way."

From that time on, THE HUMBLE WAY has endeavored to hold true to its guiding purposes of telling the Humble story accurately and of bringing employees closer together in a common bond of knowledge and understanding. The magazine has become a written record of Humble and its people—and of the Humble way of doing business.

THE HUMBLE WAY was born at the beginning of an unusually productive 5-year period in the Company's history. The first issue fell between VE and VJ Days. Soon afterward, an unprecedented (and unexpected) demand for oil and its products sent Humble's operations to even higher levels than during the war. Between 1945 and 1950, the Company invested more than half a billion dollars in new facilities to keep pace with the upward trend in demand. The number of employees increased from 16,000 to more than 18,000. Some 3395 wells were drilled in that 5-year period alone, and other operations conformed to the general pattern of growth and expansion. All the while, THE HUMBLE WAY was on the ground to give a moving, on-the-spot account of what happened during those eventful and productive years. As it presented the Humble story, emphasis in THE HUMBLE WAY has been on facts, rather than fancy; on logical presentation, rather than on clever, colorful writing. That emphasis continues today.

THE HUMBLE WAY, like other things the Company does, is produced by teamwork. A special HUMBLE WAY Committee, composed of well informed representatives from all departments, works with members of the staff of this magazine to advance and discuss ideas for articles. The Company's Public Relations Committee reviews material proposed for each issue. When a story idea is accepted by this group, it is passed to the member of the Board of Directors responsible for that particular phase of operations.

With a Director's approval to go ahead, work on an article is begun. The first step is to get preliminary information and steering from people in the home office. Then a writer and a photographer go to the field, where they work directly with people on the job, to get pictures and gather first-hand information.

When preliminary drafts of an article are ready, they are submitted back to the original sources of information. Revised drafts, carrying changes suggested by office and field men, are prepared and submitted to departmental management. Suggestions from these groups are included in another revised draft that goes to a member of the Board of Directors for final approval. Such fine-toothed-combing takes time, but it tends to insure accuracy and authenticity.

Those who work on THE HUMBLE WAY travel far and work under all sorts of conditions to get their material. They have flown with the pipe line patrol. They have worked on the driveways of service stations. They have taken cover while pipe line ditches were being blasted. They have trod the decks of drilling tenders in the Gulf of Mexico. They have paddled piroques and bumped along on marsh buggies while exploration crews searched for oil in the Louisiana swamps. They have recorded Humble's operations in the hills and dunes of West Texas, in the forests of East Texas and Mississippi, in the mesquite flats of the *vaquero* country, and on the high plains. They have been seasick, sunburned, snow-bound, and rain-soaked while searching for the material it takes to make up an issue of THE HUMBLE WAY.

Since the magazine is a sort of mirror held up for those who cannot

see all of Humble's operations for themselves, appearance is as important as editorial accuracy. The work of artists and photographers makes a valuable and interesting supplement to the written word. And art work takes long-range planning. The paintings in this issue, for example, were begun in July, 1949. Thousands of requests for photographs, drawings, and art reproductions show that readers like what they see in the magazine.

In five years, THE HUMBLE WAY has grown to a total circulation of more than 38,000. These include employees, stockholders, ministers, newspaper editors, the trade press, bankers, libraries, teachers, service station agents and dealers, royalty owners, and others. Material from the magazine is in demand for use in other publications in this country and abroad.

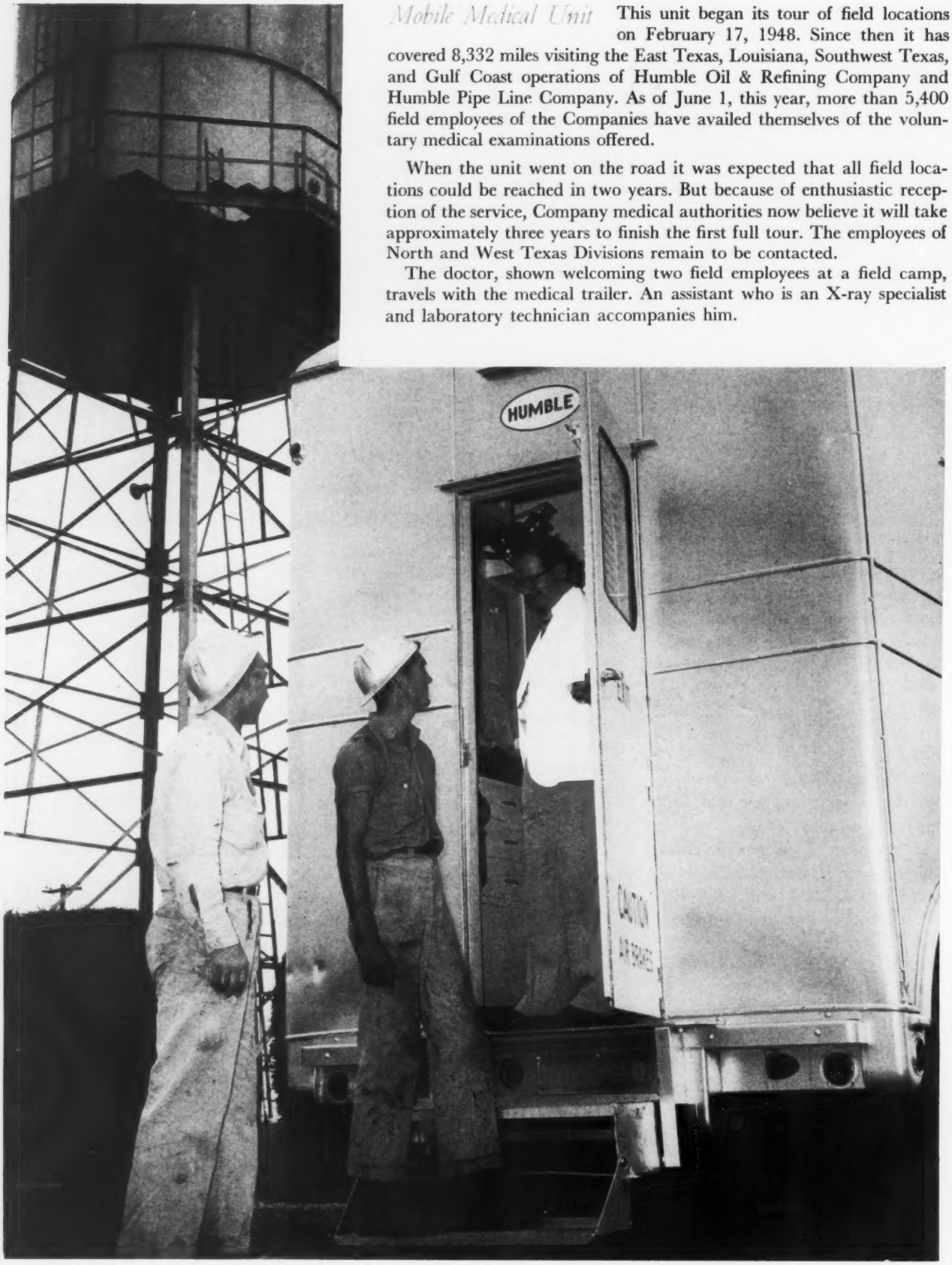
Since 1945, THE HUMBLE WAY has won a number of high-ranking awards in regional, national, and international competition. Efforts are continuing to make it a still better magazine. The staff invites ideas and suggestions for improvement.

Some of the people who put THE HUMBLE WAY together are shown here at work. Above left, Mel Coston adjusts his camera for a dramatic picture among the sand dunes of West Texas. Above right, Bob Latimer picks up information from the driller on a derrick floor in the Gulf Coast. At right, Artist E. M. Schiwetz, in the prow of a Louisiana pirogue, breaks out his camera for shots that will help him make sketches and watercolor paintings of the bayou country. Below, Frank Fields reviews changes made in a revised manuscript, while Walter Beach visualizes how story will fit the layout before him.

Mobile Medical Unit This unit began its tour of field locations on February 17, 1948. Since then it has covered 8,332 miles visiting the East Texas, Louisiana, Southwest Texas, and Gulf Coast operations of Humble Oil & Refining Company and Humble Pipe Line Company. As of June 1, this year, more than 5,400 field employees of the Companies have availed themselves of the voluntary medical examinations offered.

When the unit went on the road it was expected that all field locations could be reached in two years. But because of enthusiastic reception of the service, Company medical authorities now believe it will take approximately three years to finish the first full tour. The employees of North and West Texas Divisions remain to be contacted.

The doctor, shown welcoming two field employees at a field camp, travels with the medical trailer. An assistant who is an X-ray specialist and laboratory technician accompanies him.



THEY HAVE RETIRED

SINCE the last report in these columns, nineteen long-time employees of the Humble Companies have retired, each with more than 20 years' service.

Production Department—William B. Ewing, district superintendent at Pruitt, retired on May 16 after more than 30 years' service.

Bird A. Farmer, heavy duty pumper at Colorado City, retired on May 6 after more than 22 years' service. His entire career was spent in the West Texas Division.

Oscar D. Floyd, pipe liner at London, retired on April 17 after more than 23 years' service in the East Texas Division. He started as a laborer, and later worked as a line walker, oiler, stock gauger, and engineer.

Samuel E. Gleghorn, pumper and gauger at the Humble Field in the Conroe District, retired on April 4 after more than 25 years' service.

Monroe V. B. Roberts, roustabout and gang pusher at London, retired on April 11 after more than 23 years' service. He is a colorful veteran of the early boom days in East Texas.

Arthur J. Roden, roustabout at Friendswood, retired on April 13 after more than 30 years' service without a lost time accident. He had worked in the Goose Creek, Pierce Junction, Conroe, Tomball, and Friendswood Districts.

John A. Wright, pumper and gauger at Friendswood, retired on June 5 after more than 20 years' service. He began with Humble as a roustabout in the Humble Field, and later became a rotary helper, fireman, and derrickman at various fields over the state. He was the first man to be transferred to Friendswood for production operations in 1937.

Baytown Refinery—Catarino Castro, laborer, retired on May 25 after more than 26 years' service. He had worked at the Light Oil Treaters unit for the last seven years.

Dennis M. McLean, helper, retired on April 3 after more than 25 years' service. He will farm and raise cattle.

Ira E. Montgomery, welder first class, retired on May 1 after almost 25 years' service.

E. W. Berry, left, and H. C. Dennett, right, West Texas and Southwest Texas division managers in the Sales Department, received gold wrist watches from their associates at a pre-retirement dinner in Houston on June 5. Sales Manager F. A. Watts presented the watches. Mr. Berry will retire on August 24; Mr. Dennett on July 17. The dinner and short program was attended by members of the Board of Directors and representatives of all departments of the Humble Companies. President Hines H. Baker said that both had been "useful and cheerful employees," and expressed on behalf of all Humble people an appreciation for the manner of life and the manner of doing business which both exemplified. A retirement party attended by division personnel was given Mr. Dennett in Corpus Christi on June 9; a similar party in Abilene will honor Mr. Berry in July.

James A. Rhodes, assistant coordinator of line tankage layouts, retired on March 26 after more than 25 years' service. He started as a pipe scraper in the Paint Shop, and advanced steadily to become successively a helper, assistant dockmaster, and finally assistant coordinator of line tankage layouts.

Robert F. Shoemaker, helper, retired on May 30 after almost 25 years' service. He first came with Humble in the Production Department, and later transferred to Baytown Refinery as a helper in the carpenter shop.

Fred L. Thrasher, boilermaker first class, retired on June 14 after more than 21 years' service.

Charles A. Webber, Sr., assistant general foreman, retired on April 16 after more than 30 years' service. He supervised or helped supervise the construction of a large portion of the storage tanks and important refining units at Baytown Refinery.

Humble Pipe Line Company—Clarence B. Franklin, engineer at Hearne, retired on June 16 after more than 23 years' service.

Alexander C. Hayes, division communications and electrical man, retired on June 15 after almost 30 years' service.

John L. Mitchmore, oiler at Lytle, retired on April 9 after almost 22 years' service. He helped assemble the equipment at Lytle, and became oiler when the station was opened. In his own words, he helped set the machinery and then stayed around to keep it running.

John K. Pierce, deliveryman at Baytown, retired on May 26 after almost 23 years' service. He began as a gas engineman at the Desdemona Gas Plant, and later became a clerk, district gauger, chief engineer, and finally head gas deliveryman in his career with the Company.

Houston Office—Mrs. Eula Collins Lawrence, stenographer in the Law Department, retired on April 2 after more than 26 years' service.

By the way . . .

The first oil flowed through Humble Pipe Line Company's new 18-inch line when President R. V. Hanrahan opened a valve by remote control at Satsuma Pump Station, near Houston, on June 13. Other Pipe Line executives present were, l-r: H. C. Evans, W. S. Spangler, O. Q. Lomax, H. H. Hetzler, and A. E. Payne. This direct 370-mile line from Kemper in West Texas to Satsuma cuts 52 miles off the old pipe line route. Present capacity is 85,000 barrels of oil a day. With the addition of three intermediate stations, 135,000 barrels a day can be delivered.

Deaths

Since the last issue of THE HUMBLE WAY, nine active employees and five annuitants have died.

Active employees who have died are DELLET ANDREWS, 52, pipe liner, operating field, on May 14; THEODORE J. CALLIHAN, 35, special laborer at Baytown Refinery, on April 16; TRAVIS A. DENNARD, 45, pumper and gauger at Gladewater, on April 7; RUEL J. FALKENBURG, 28, rotary helper at Stratton, on May 28; LONNIE L. GOYNES, 29, welder special helper at Alice, on May 13; DENNIS PHILLIPS, 28, laborer at Baytown Refinery, on April 16; FRANK L. STATLER, 50, chief warehouseman, Houston Office, on April 14; ANSE M. WARWICK, 51, operator, Naphtha Fractionating Units, Baytown Refinery, on April 21; and MICHAEL T. YOUNG, 40, manager of the Austin District, Sales, on April 3.

Annuitants: JOHN B. BLACKWELL, 66, roustabout at Vernon before his retirement, died on May 18; LAMARQUE M. DUHON, SR., 60, pumper and gauger at Imogene before his retirement, died on May 7; FRANK C. HELMER, 49, helper first class at Baytown Refinery before his retirement, died on March 27; JOSEPH M. MONAGHAN, 57, secretary and assistant treasurer, Houston Office, before his retirement, died on April 7; and FRANKLIN H. SLINK, 63, assistant district gauger at Alice before his retirement, died on April 3.

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Published every other month for employees and stockholders

HUMBLE OIL & REFINING COMPANY

P. O. Box 2180, HOUSTON 1, TEXAS

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Driller checks cutting edge and watercourse of a new jet-type drag bit before it is run in the hole. (See They Drill Faster, page 19.)

This year we're having a 43,500-week vacation!

What a vacation that would be for one man! He'd have to live almost as long as Methuselah and report back to work sometime in the year 2787. But some 18,000 Humble people, each taking from 2 to 4 weeks, will have a total of 43,500 weeks' paid vacation in 1950.

That's many a relaxing hour of rest and recreation in the mountains, at the seashore, "seeing the country," or just plain loafing in the back yard. And the pay goes on all the time.

We believe in vacations. Not only do they give us a chance to relax after a year's work; they help prepare us for the year ahead. Vacations should be good for everyone . . . for employees, their families, and the Company.

HUMBLE OIL & REFINING COMPANY